

IN THE CLAIMS

1.-9. (Cancelled)

Claim 10 has been amended as follows:

10. (Currently amended) A gradient coil system for a magnetic resonance apparatus, comprising:

a gradient coil system comprising a plurality of assembled components including an a gradient coil electrical conductor arrangement; and said gradient coil electrical conductor arrangement including gradient coil conductors comprised of radiation-sintered metal powder material.

Claim 11 has been amended as follows:

11. (Currently amended) A gradient coil system as claimed in claim 10 wherein said metal powder material is selected from the group consisting of copper powder and aluminum powder.

Claim 12 has been amended as follows:

12. (Currently amended) A gradient coil system as claimed in claim 10 wherein said plurality of components also includes insulation and cooling devices, and wherein said gradient coil conductor arrangement is cast with epoxy resin with at least one other component in said plurality of components.

Claim 13 has been amended as follows:

13. (Currently amended) A gradient coil system as claimed in claim 10 wherein said gradient coil conductor arrangement comprises hollow gradient coil conductors for conveyance of a coolant medium therethrough.

Claim 14 has been amended as follows:

14. (Currently amended) A method for manufacturing a gradient coil system for a magnetic resonance apparatus, said gradient coil system comprising a plurality of components including a gradient coil conductor arrangement, comprising the steps of :

producing said gradient coil conductor arrangement by successively applying respective layers of metal powder sinter material on a workpiece platform and successively sintering the respective layers by application of radiation to the individual layers in succession; and
assembling said gradient coil conductor arrangement with other components in said plurality of components to produce said gradient coil system.

15. (Original) A method as claimed in claim 14 comprising sintering said metal powder sinter material with laser radiation.

Claim 16 has been amended as follows:

16. (Currently amended) A method as claimed in claim 14 comprising generating a three-dimensional design plan for said gradient coil conductor arrangement and dividing said three-dimensional design plan into gradient coil conductor paths respectively disposed in said layers.

Claim 17 has been amended as follows:

17. (Currently amended) A method as claimed in claim 14 comprising additionally generating, by said sintering, at least one removable web between respective portions of said gradient coil conductor arrangement.

Claim 18 has been amended as follows:

18. (Currently amended) A method as claimed in claim 14 wherein the step of assembling said components to form said gradient coil system comprises casting said plurality of components in a casting mold, and comprising sintering at least one adjustment element, when sintering said conductor arrangement, that automatically adjusts said gradient coil conductor arrangement in said casting mold.

Claim 19 has been amended as follows:

19. (Currently amended) A method as claimed in claim 14 wherein one of said plurality of components is insulation, and wherein the step of assembling said components comprises casting said gradient coil conductor arrangement together with said insulation in a casting mold.

Claim 20 has been amended as follows:

20. (Currently amended) A method as claimed in claim 14 wherein one of said plurality of components is cooling device, and wherein the step of assembling said components comprises casting said gradient coil conductor arrangement together with said cooling device in a casting mold.